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09/903,210	07/11/2001	Masao Yamamoto	01-412	9975

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SHAW PITTMAN
IP GROUP
1650 TYSONS BOULEVARD
SUITE 1300
MCLEAN, VA 22102

EXAMINER

FINEMAN, LEE A

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/903,210

Applicant(s)

YAMAMOTO, MASAO

Examiner

Lee Fineman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5 and 8-26 is/are pending in the application.
- 4a) Of the above claim(s) 19-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 8-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 30 April 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. This Office Action is in response to an amendment filed 30 April 2003 in paper number 11 in which claims 1, 5, 8-9, 11-12 and 16 were amended and claims 2-4 and 6-7 were cancelled. Claims 1, 5 and 8-26 are pending.

Election/Restrictions

2. As noted in the previous office action, claims 19-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Drawings

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 30 April 2003 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Specification

4. The abstract of the disclosure is objected to because of the following informality, in line 20 "state" should be followed by --where--. Correction is required. See MPEP § 608.01(b).

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Claim Objections

5. Claims 1-15 and 17-18 are objected to because of the following informalities: In claim 1, line 16, "lefy ey" should be --left eye--. The dependent claims inherit the deficiencies of the claims from which they depend. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 5, 8 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Lia, U.S. Patent No. 5,222,477.

Regarding claims 1 and 5, Lia discloses a device for picking up a stereoscopic image (figs. 2 and 4) comprising one image pickup element (22) to which an image light for a left eye and an image light for a right eye are guided for picking up an image for the left eye and an image for the right eye which are used as a stereoscopic image and given an appropriate visual angle (column 3, line 60-column 4, line 19); a left-eye shutter means (30, figs. 2 and 3) disposed in an optical path of the image light for the left eye for taking any one of a shield state where the image light for the left eye is shielded and a pass state where the image light for the left eye is allowed to pass; and a right-eye shutter means (30, figs. 4 and 5) for taking any one of a shield state where the image light for the right eye is shielded and a pass state where the image light for the left eye is allowed to pass; wherein said left-eye shutter means and said right-eye shutter

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means are alternately put into the pass state to make said image pickup element alternately pick up the image light for the right eye and the image light for the left eye (column 4, lines 2-8); one objective lens system (25) that allows the image light for the left eye and the image light for the right eye to pass (column 3, lines 52-55); one light shield plate (27) having two openings (28, 29) defined therein so that one light that has passed through one of those two openings in said light shield plate becomes the image light for the left eye (figs. 4 and 5), and the other light that has passed through the other opening in said shield plate becomes the image light for the right eye (figs. 2 and 3) wherein the two openings are disposed eccentrically from the optical axis of said objective lens system by regular distances, respectively and wherein said light shield plate is disposed in an optical path between said objective lens system and said image pickup element to shield the image light that has passed through said objective lens system (figs. 2 and 4) and wherein said light shield plate is disposed in proximity to an image sided principle point of said objective lens system (column 3, lines 60-67); and wherein said objective lens system comprises one objective lens (25), and said light shield plate is disposed close to any surface of said objective lens (figs. 2 and 4).

Regarding claims 8 and 16, Lia further discloses wherein each of said left-eye shutter means and said right-eye shutter means includes a shutter plate (figs. 2 and 4, 30) that is disposed to be movable forward and backward in an optical path of the image light for the left eye or the image light for the right eye, through which the light does not pass; and wherein said shutter plate is disposed in each of the openings of said light shield plate (column 3, line 60-column 4, line 19) which is fitted in an optical path of image light of a video camera (21).

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Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lia in view of Mihalca et al.

Regarding claim 9-11 and 13, Lia further discloses a light shield plate with filters disposed on each of the openings of the light shield plate (fig. 7 and column 4, lines 32-34). Lia discloses the claimed invention except wherein said left-eye shutter means and said right-eye shutter means includes a polarizing plate comprising two polarizing plates each of which polarizes the image light that has passed through one polarizing plate into the polarized light different in an orientation of a vibrating face from the image light that has passed through another polarizing plate; and a passing light selecting means for alternately taking a first state in which one image light which has been polarized into the polarized light is shielded and the other image light is allowed to pass, and a second state in which the other image light which has been polarized into the polarized light is shielded, and said one image light is allowed to pass wherein said passing light selecting means comprises one liquid crystal plate and one selection polarizing plate wherein said liquid crystal takes a non-rotation state in which the image light which has been polarized into the polarized light by the polarizing plate is allowed to pass without changing the orientation of its vibration plane, and a rotation state in which the image light which has been polarized into the polarized light by the polarizing plate is allowed to pass after its vibration

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plane has been rotated; wherein said selection polarizing plate allows one of the image lights that have passed through said polarizing plate to pass and the other image light to be shielded in one state of said non-rotation state and said rotation state, and allows the one of the image lights that have passed through said liquid crystal plate to be shielded and the other image light to be pass in the other state of said non-rotation state and said rotation state; and wherein both of said left-eye shutter means and said right-eye shutter means change over the shield state and the passing state at a time interval shorter than 1/40 seconds. Mihalca et al. teach a device for picking up a stereoscopic image (fig. 2) comprising one image pickup element (14) to which an image light for a left eye and an image light for a right eye are guided for picking up an image for the left eye and an image for the right eye which are used as a stereoscopic image and given an appropriate visual angle (column 3, lines 26-33) wherein said left-eye shutter means and said right-eye shutter means includes a polarizing plate (figs. 4 and 4A, 46) comprising two polarizing plates (54, 56) each of which polarizes the image light that has passed through one polarizing plate into the polarized light different in an orientation of a vibrating face from the image light that has passed through another polarizing plate (58, 60); and a passing light selecting means (48, 50, 52) for alternately taking a first state in which one image light which has been polarized into the polarized light is shielded and the other image light is allowed to pass (fig. 4), and a second state in which the other image light which has been polarized into the polarized light is shielded, and said one image light is allowed to pass (fig. 4A) wherein said passing light selecting means comprises one liquid crystal plate (48) and one selection polarizing plate (52) wherein said liquid crystal takes a non-rotation state in which the image light which has been polarized into the polarized light by the polarizing plate is allowed to pass without changing the orientation of its

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vibration plane, and a rotation state in which the image light which has been polarized into the polarized light by the polarizing plate is allowed to pass after its vibration plane has been rotated; wherein said selection polarizing plate allows one of the image lights that have passed through said polarizing plate to pass and the other image light to be shielded in one state of said non-rotation state and said rotation state, and allows the one of the image lights that have passed through said liquid crystal plate to be shielded and the other image light to be pass in the other state of said non-rotation state and said rotation state (column 5, line 13-column 6, line 3); and wherein both of said left-eye shutter means and said right-eye shutter means change over the shield state and the passing state at a time interval shorter than 1/40 seconds (column 6, lines 60-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the color filters of Lia with the polarizing plates of Mihalca and add the liquid crystal plates/ selection polarizing plates shutter system as suggested by Mihalca et al. to provide a compact device with better stereoscopic properties like perceiving depth (column 3, lines 55-59).

Regarding claim 12, Lia in view of Mihalca et al. as set for above disclose wherein said objective lens (25, Lia) and said light shield plate (27, Lia) are integrated with each other (figs. 2, 4 and 6), said image pickup element (22, Lia), said liquid crystal plate (48, Mihalca) and said selection polarizing plate (52, Mihalca) are integrated together, and said image pickup element, said liquid crystal plate and said selection polarizing plate are separable from said objective lens and said light shield plate (at least in so far as the objective lens and the light shield plate can be broken and removed).

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10. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lia in view of Mihalca et al. as applied to claim 13 above and further in view of Carbery, U.S. Patent No. 5,475,419.

Lia in view of Mihalca et al. as applied to claim 13 above disclose the claimed invention except wherein each of said left-eye shutter means and said right-eye shutter means changes over the shield state and the passing state at a time interval which is the half of a period of time during which one frame is displayed on a predetermined display device on which the stereoscopic image is displayed and wherein each of said left-eye shutter means and said right-eye shutter means changes over the shield state and the passing state at a time interval of 1/60 seconds. Carbery teaches that flicker is not detectable at 30 frames per second in which each field changes at a time interval of 1/60 seconds (column 2, lines 21-25) which is a time interval of half of a period of time during which one frame is displayed on a predetermined display device on which the stereoscopic image is displayed. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a frame speed of at least 30/second and a switching speed of at least 1/60 seconds in the system Lia in view of Mihalca et al. as suggested by Carbery to prevent image flicker.

11. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lia in view of Mihalca et al. and Carbery, as applied to claims 14 and 15 above, and further in view of Woodgate et al., U.S. Patent No. 5,917,562.

Lia in view of Mihalca et al. and Carbery, as applied to claims 14 and 15 above, disclose the claimed invention except for the display device comprising a display screen in which a large

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number of linear regions that display a part of an image are arranged in parallel into a plane, and a part of a given moving image is displayed on each of the linear regions to display the given moving image; a frame memory in which image data representative of an image for one frame of the moving image which is displayed on said display screen is recorded; a control means that receives the data representative of the moving image to be displayed on said display screen from said image pickup device, records the data in said frame memory, and displays the data on said display screen at a given timing to control an image displayed on said display screen; a polarizing plate that is disposed on a front surface of said display screen for polarizing the light from said display screen into a polarized light having a predetermined vibration plane, in which the linear regions are divided into two alternate groups consisting of one group that forms a first region where a part of the left-eye image transmitted to the left eye of the viewer is displayed, and the other group that forms a second region where a part of the right-eye image transmitted to the right eye of the viewer and picked up with an appropriate visual angle with respect to the left-eye image is displayed; and a polarization plane rotating means that is disposed on a front surface of said polarizing plate for changing the vibration plane of the polarized light from said first region which has passed through said polarizing plate and the vibration plane of the polarized light from said second region which has passed through said polarizing plate in different directions; wherein said control means records the image corresponding to the first frame in said frame memory in an interlaced manner while the left-eye image is drawn on one region of said first region and said second region, and the right-eye image is drawn on the other region. Woodgate et al. teach a display device (fig. 5) comprising a display screen (4) in which a large number of linear regions that display a part of an image are arranged in parallel into a

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plane, and a part of a given moving image is displayed on each of the linear regions to display the given moving image (5a, 5b, column 3, line 66-column 4, line 37); a frame memory in which image data representative of an image for one frame of the moving image which is displayed on said display screen is recorded (in so far as the image data must be at least temporarily stored in memory by the control means (7) to be able to switch them); a control means (7) that receives the data representative of the moving image to be displayed on said display screen from said image pickup device, records the data in said frame memory, and displays the data on said display screen at a given timing to control an image displayed on said display screen (column 3, line 66-column 4, line 4); a polarizing plate (33, fig. 8) that is disposed on a front surface of said display screen for polarizing the light from said display screen into a polarized light having a predetermined vibration plane, in which the linear regions are divided into two alternate groups consisting of one group that forms a first region where a part of the left-eye image transmitted to the left eye of the viewer is displayed, and the other group that forms a second region where a part of the right-eye image transmitted to the right eye of the viewer and picked up with an appropriate visual angle with respect to the left-eye image is displayed (column 4, lines 14-37 and fig. 8); and a polarization plane rotating means (20, fig. 8) that is disposed on a front surface of said polarizing plate for changing the vibration plane of the polarized light from said first region which has passed through said polarizing plate and the vibration plane of the polarized light from said second region which has passed through said polarizing plate in different directions (fig. 8); wherein said control means records the image corresponding to the first frame in said frame memory in an interlaced manner while the left-eye image is drawn on one region of said first region and said second region, and the right-eye

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image is drawn on the other region (column 7, lines 5-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the display of Woodgate et al. with the systems of Mihalca et al. or Nakamura in view of Carbery to improve cross talk performance with a low cost device (Woodgate et al., column 2, line 55-column 3, line 17).

Response to Arguments

12. Applicant's arguments filed 30 April 2003 have been fully considered but they are not persuasive.

Applicant argues that none of the cited references teach or suggest "wherein said light shield plate is disposed in proximity to an image sided principle point of said objective lens system." The examiner respectfully disagrees. In figs. 2, 4 and 6 of Lia, the light shield plate (27) is clearly in proximity to both the objective lens (25) and the image pickup element (22) and therefore is in proximity to an image sided principle point of said objective lens. Further as stated in Lia in column 3, lines 60-67, the light shield plate may be moved to ensure it is within a pupil or principle point.

13. Applicant further argues that, in regards to claim 16, that none of the references teach or suggest the light shield plate fitted in the optical path of a video camera. The examiner respectfully disagrees. Each of the references teaches a light shield plate (27, Lia and 20, Mihalca) fitted in the optical path of a video camera (21, Lia and 14, Mihalca). With regard to the video cameras not being "ordinary video cameras" it is noted that the features upon which applicant relies (i.e., ordinary) is not recited in the rejected claim(s). Although the claims are

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interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, the examiner believes that the video cameras of the references are "ordinary video cameras" that being used in endoscope systems.

14. It is noted by the Examiner that the drawing and objections made in the previous Office Action have been withdrawn due to amendment and persuasive arguments presented by the Applicant.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (703) 305-5414. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (703) 305-0024. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



LAF

July 12, 2003


MARK A. ROBINSON
PRIMARY EXAMINER